

LISTING OF CLAIMS

1. (previously presented) A continuous process of making polytrimethylene ether glycol comprising:
 - (a) continuously providing 1,3-propanediol reactant and polycondensation catalyst; and
 - (b) continuously polycondensing the 1,3-propanediol reactant to polytrimethylene ether glycol in a reactor having two or more reaction stages.

Claims 2-19 (canceled)

20. (original) The process of claim 1 wherein the catalyst is homogeneous.
21. (original) The process of claim 20 wherein the catalyst is selected from the group consisting of a Lewis Acid, a Bronsted Acid, a super acid, and mixtures thereof.
22. (original) The process of claim 21 wherein the catalyst is selected from the group consisting of inorganic acids, organic sulfonic acids, heteropolyacids, and metal salts thereof.
23. (original) The process of claim 1 wherein the catalyst is selected from the group consisting of sulfuric acid, fluorosulfonic acid, phosphorus acid, p-toluenesulfonic acid, benzenesulfonic acid, phosphotungstic acid, phosphomolybdic acid, trifluoromethanesulfonic acid, 1,1,2,2-tetrafluoroethanesulfonic acid, 1,1,1,2,3,3-hexafluoropropanesulfonic acid, bismuth triflate, yttrium triflate, ytterbium triflate, neodymium triflate, lanthanum triflate, scandium triflate and zirconium triflate.
24. (original) The process of claim 1 wherein the catalyst is sulfuric acid.

Claims 25-45 (canceled)

46. (currently amended) A continuous multi-stage process comprising reacting at least one reactant in a liquid phase in an up-flow column reactor having two or more stages, and forming a gas or vapor phase by-product wherein the gas or

vapor phase by-product is continuously removed at the top and at least one intermediate stage.

Please add the following new claims:

- 47. (new) The process of claim 1 wherein the polycondensing is carried out at a temperature greater than 150°C.
- 48. (new) The process of claim 47 wherein the temperature is greater than 160°C.
- 49. (new) The process of claim 47 wherein the temperature is greater than 180°C.
- 50. (new) The process of claim 1 wherein the polycondensing is carried out at a temperature less than 250°C.
- 51. (new) The process of claim 50 wherein the temperature is less than 220°C.
- 52. (new) The process of claim 50 wherein the temperature is less than 210°C.
- 53. (new) The process of claim 47 wherein the temperature is less than 210°C.
- 54. (new) The process of claim 1 wherein the polycondensation is carried out at a pressure of less than one atmosphere.
- 55. (new) The process of claim 54 wherein the pressure is less than 500 mm Hg.
- 56. (new) The process of claim 54 wherein the pressure is less than 250 mm Hg.

57. (new) The process of claim 54 wherein the pressure is greater than 1 mm Hg.
58. (new) The process of claim 57 wherein the pressure is greater than 20 mm Hg.
59. (new) The process of claim 57 wherein the pressure is greater than 50 mm Hg.
60. (new) The process of claim 1 wherein the 1,3-propanediol reactant is selected from: 1,3-propanediol, dimers of 1,3-propanediol, trimers of 1,3-propanediol, and mixtures thereof.
61. (new) The process of claim 60 wherein the 1,3-propanediol reactant is selected from: 1,3-propanediol, and a mixture containing at least 90 weight % of 1,3-propanediol.
62. (new) The process of claim 60 wherein the 1,3-propanediol reactant is 1,3-propanediol.
63. (new) The process of claim 62 wherein the polycondensation pressure is between 50 and 250 mm Hg.
64. (new) The process of claim 1, wherein the catalyst is selected from the group consisting of zeolites, fluorinated alumina, acid-treated silica, acid-treated silica-alumina, heteropolyacids and heteropolyacids supported on zirconia, titania, alumina and/or silica.
65. (new) The process of claim 1 wherein the polycondensation is carried out in a reactor equipped with a heat source located within the reaction medium.
66. (new) The process of claim 1, wherein the reactor has 3-30 stages.

67. (new) The process of claim 1 wherein the reactor has 4-20 stages.
68. (new) The process of claim 1 wherein the reactor has 8-15 stages.
69. (new) The process of claim 1 wherein the 1,3-propanediol reactant is fed at multiple locations to the reactor.
70. (new) The process 1 wherein an inert gas is added to the reactor at one or more stages.
71. (new) The process of claim 1 wherein water vapor is generated as a by-product of the reaction and is removed from the reactor in at least one intermediate stage.
72. (new) The process of claim 1 wherein the polycondensation is first carried out in at least one prepolymerizer reactor and then continued in a column reactor, the 1,3-propanediol reactant comprises 90 weight % or more 1,3-propenediol, and in the prepolymerizer reactor the 1,3-propanediol is polymerized with the catalyst to a degree of polymerization of at least 5.
73. (new) The process of claim 72 wherein in the at least one prepolymerizer reactor the 1,3-propanediol is polymerized with the catalyst to a degree of polymerization of at least 10 and the column reactor comprises 3-30 stages.
74. (new) The process of claim 72 wherein in the at least one prepolymerizer reactor the 1,3-propanediol is polymerized with the catalyst to a degree of polymerization of at least 20.
75. (new) The process of claim 72 wherein the at least one prepolymerizer reactor is a well-mixed tank reactor.

76. (new) The process of claim 72 wherein steam generated in the at least one prepolymerizer reactor is removed and the product of the at least one prepolymerizer is fed to the column reactor.
77. (new) The process of claim 72 wherein an inert gas is fed to the column reactor.
78. (new) The process of claim 1 wherein the polytrimethylene ether glycol has a number average molecular weight of at least 1,000.
79. (new) The process of claim 1 wherein the 1,3-propanediol reactant comprises 20 weight percent or less of one or more comonomer diols.
80. (new) The process of claim 79 wherein said comonomer diols are selected from: 1,6-hexanediol, 1,7-heptanediol, 1,8-octanediol, 1,9-nonanediol, 1,10-decandiol, 1,12-dodecanediol, 3,3,4,4,5,5-hexafluoro-1,5-pentanediol, 2,2,3,3,4,4,5,5-octafluoro-1,6-hexanediol, and 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10-hexadecafluoro-1,12-dodecanediol.
81. (new) The process of claim 79 wherein said comonomer diols are selected from cycloaliphatic diols and polyhydroxy compounds.
82. (new) The process of claim 81 wherein said comonomer diols are selected from 1,4-cyclohexanediol, 1,4-cyclohexanedimethanol, isosorbide, glycerol, trimethylolpropane, and pentaerythritol.
83. (new) A continuous process of making polytrimethylene ether glycol comprising: continuously polycondensing a 1,3 propanediol reactant to polytrimethylene ether glycol in a reactor at a pressure of less than one atmosphere.

84. (new) The process of claim 83 wherein the pressure is less than 500 mm Hg.
85. (new) The process of claim 83 wherein the pressure is less than 250 mm Hg.
86. (new) The process of claim 83 wherein the pressure is greater than 1 mm Hg.
87. (new) The process of claim 86 wherein the pressure is greater than 20 mm Hg.
88. (new) The process of claim 86 wherein the pressure is greater than 50 mm Hg.
89. (new) The process of claim 83 wherein the 1,3-propanediol reactant comprises 20 weight percent or less of one or more comonomer diols.
90. (new) The process of claim 89 wherein said comonomer diols are selected from: 1,6-hexanediol, 1,7-heptanediol, 1,8-octanediol, 1,9-nonanediol, 1,10-decandiol, 1,12-dodecanediol, 3,3,4,4,5,5-hexafluoro-1,5-pentanediol, 2,2,3,3,4,4,5,5-octafluoro-1,6-hexanediol, and 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10-hexadecafluoro-1,12-dodecanediol.
91. (new) The process of claim 89 wherein said comonomer diols are selected from cycloaliphatic diols and polyhydroxy compounds.
92. (new) The process of claim 91 wherein said comonomer diols are selected from 1,4-cyclohexanediol, 1,4-cyclohexanedimethanol, isosorbide, glycerol, trimethylolpropane, and pentaerythritol.

93. (new) The process of claim 83 wherein the 1,3-propanediol reactant is selected from: 1,3-propanediol, dimers of 1,3-propanediol, trimers of 1,3-propanediol, and mixtures thereof.
94. (new) The process of claim 83 wherein the 1,3-propanediol reactant is selected from: 1,3-propanediol, and a mixture containing at least 90 weight % of 1,3-propanediol.
95. (new) The process of claim 83 wherein the 1,3-propanediol reactant is 1,3-propanediol.